

Notice of Allowability

Application No.

10/076,157

Examiner

David J Steadman

Applicant(s)

POMPEJUS ET AL.

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1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 9/27/04.
2. ☒ The allowed claim(s) is/are 4.
3. ☒ The drawings filed on 15 February 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/212,247.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 2/15/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Status of the Application

- [1] Claim 4 is pending in the application.
- [2] Applicants' amendment to the claims, filed September 27, 2004, is acknowledged. This listing of the claims replaces all prior versions and listings of the claims.
- [3] Applicants' amendment to the specification, filed September 27, 2004, is acknowledged.
- [4] Receipt of a sequence listing in computer readable form (CRF), a paper copy thereof, a statement of their sameness, and a statement that no new matter has been added to the specification by the paper copy of the sequence CRF, all filed September 27, 2004, is acknowledged.

Information Disclosure Statement

- [5] All references cited in the information disclosure statement (IDS), filed February 15, 2002, have been considered by the examiner. A copy of the IDS is attached to the instant Notice of Allowability.

Sequence Compliance

- [6] The instant application contains at least one nucleic acid and/or amino acid sequence that is encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). Applicants have satisfied the

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requirements for sequence compliance, *i.e.*, the application contains a computer readable form (CRF) of the sequence listing, a paper copy thereof, a statement that the CRF and paper copy of the sequence listing are identical, and, as the sequence listing is a substitute sequence listing, a statement that the paper copy of the substitute sequence listing contains no new matter.

Examiner's Amendment to the Specification

[7] Applicants' claim to domestic priority under 35 U.S.C. 121 to US non-provisional application 09/212,247, is acknowledged. In accordance with MPEP 1302.04, an informal examiner's amendment is set forth below to state the filing date of application 09/212,247.

[8] Replace the amendment to the specification, filed April 21, 2004 with the following:

--This application is a divisional of US non-provisional application number 09/212,247, filed December 16, 1998, now US Patent 6,391,603--.

Examiner's Amendment to the Claims

[9] An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

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[10] Authorization for this examiner's amendment was given in a telephone interview with Mr. Daniel S. Kim on November 17, 2004.

[11] Replace claim 4 with the following:

4. An isolated protein having the amino acid sequence of SEQ ID NO:2 with lysine at position 7 of the amino acid sequence of SEQ ID NO:2 replaced with valine, and wherein said protein has phosphoribosyl-pyrophosphate synthetase activity.

Reasons for Allowance

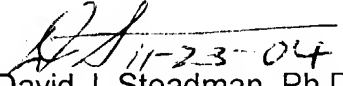
[12] The following is an Examiner's statement of reasons for allowance. The examiner has found no teaching or suggestion in the prior art directed to the claimed variant of SEQ ID NO:2 having lysine at position 7 of SEQ ID NO:2 replaced with valine and having phosphoribosyl-pyrophosphate (PRPP) synthetase activity. Therefore, claim 4, drawn to an isolated protein having the amino acid sequence of SEQ ID NO:2 with Lys at position 7 of the amino acid sequence of SEQ ID NO:2 replaced with valine, and wherein said protein has PRPP synthetase activity, is allowable over the prior art of record. The specification discloses the use of the fungi *Ashbya gossypii* in the production of riboflavin (p. 1). One of the enzymes involved in the *A. gossypii* riboflavin biosynthetic pathway, PRPP synthetase (SEQ ID NO:2), is feedback inhibited, thus limiting the production of riboflavin (pp. 13-14 and 16). In order to overcome this feedback inhibition, the specification teaches *Ashbya gossypii* PRPP synthetase mutants that are resistant to feedback inhibition, including replacement of lysine with

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valine at position 7 of SEQ ID NO:2 (p. 5) and the use of these mutants for increased production of riboflavin (pp. 16-17). In view of these teachings, the asserted utility of the claimed invention, *i.e.*, expression of the claimed polypeptide in *Ashbya gossypii* for biosynthetic production of riboflavin, is specific and substantial.

[13] Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Steadman, whose telephone number is (571) 272-0942. The Examiner can normally be reached Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Art Unit receptionist whose telephone number is (703) 308-0196.


David J. Steadman, Ph.D.
Primary Examiner
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